Claims:

1. An assay method for a compound able to modulate the interaction between (i) ATM or a protein having an associated kinase activity and (ii) p53 or any protein having ATM phosphorylation sites homologous to those of p53, the method including the steps of:

(a) bringing into contact a substance including a peptide fragment of (i) or a derivative, variant or analogue thereof, a substance including the relevant fragment of p53 or any protein having phosphorylation sites homologous to p53, or a variant, derivative or analogue thereof, and a test compound; and

(b) determining interaction or binding between said substances and test compound.

2. An assay method for a compound able to modulate the interaction between (i) ATM or a protein having an associated kinase activity and (ii) p53 or any protein having ATM phosphorylation sites homologous to those of p53, the method including the steps of:

(a) bringing into contact a substance which includes at least a fragment of (i) which phosphorylates p53 or any protein having phosphorylation sites homologous to those of p53, a substance which includes at least a fragment of p53 or any protein, which includes a site which is phosphorylated by (i), and a test compound; and

(b) determining phosphorylation at said site.

3. An assay method for a compound able to affect p53 activity by modulation of interaction between (i) ATM or a protein having an associated kinase activity and (ii) p53, the method including the steps of:

(a) bringing into contact a substance which is p53 or a fragment, derivative, variant or analogue thereof, and a test compound; and

(b) determining p53 activity in the presence and

absence of (i).

4. The method according to any one of claims 1 to 3 wherein the protein having an associated kinase activity is DNA-PK or ATR.

5. An agent capable of modulating interaction between (i) ATM or a protein having an associated kinase activity and (ii) p53 or any protein having ATM phosphorylation sites homologous to p53 obtained using a method according to any of claims 1 to 4.

6. An agent according to claim 5 capable of modulating ATM-mediated phosphorylation on p53 or said homologous sites.

7. A peptide fragment of p53 capable of modulating interaction between ATM or a protein having an associated kinase activity and p53.

8. A peptide according to claim 7 capable of modulating phosphorylation of p53 by ATM or by a protein having an associated kinase activity.

9. A peptide according to claim 7 or claim 8 which has a sequence found in human p53 including Thr18.

10. A peptide according to claim 7 or claim 8 which has a sequence found in human p53 including Ser15.

11. A peptide according to any one of claims 7 to 10 wherein the protein having an associated kinase activity is DNA-PK or ATR.

12. A nucleic acid isolate encoding a peptide according to any of claims 7 to 11.

13. A peptide fragment of ATM or a protein having an associated kinase activity which is capable of modulating interaction between ATM or the protein and p53.

14. A peptide according to claim 13 capable of modulating phosphorylation of p53 by ATM or a protein having an associated kinase activity.

15. The peptide of claim 13 or claim 14 wherein the protein having an associated kinase activity is DNA-PK or ATR.

16. A nucleic acid isolate encoding a peptide according to any one of claims 13 to 15.

17. An agent or peptide fragment or nucleic acid isolate according to any of claims 5 to 16 for use in a method of treatment by therapy involving modulating ATM action.

18. Use of an agent or peptide fragment or nucleic acid isolate according to any of claims 5 to 17 in the manufacture of a medicament for modulating ATM action.

19. An assay method for a compound able to affect DNA binding by ATM or a protein having an associated kinase activity, the method including the steps of:

(a) bringing into contact a substance which is ATM or a protein having an associated kinase activity, or a fragment, variant or derivative which is able to bind DNA, DNA, and a test compound, under conditions wherein, in the absence of the test compound being an inhibitor of DNA binding by ATM or the protein having an associated kinase activity, said substance binds DNA; and

(b) determining binding between said substance and said DNA.

20. The assay method according to claim 19 wherein the

protein having an associated kinase activity is DNA-PK or ATR.

21. An agent capable of affecting DNA binding by ATM obtained using a method according to claim 19 or claim 20.

22. An agent according to claim 21 for use in a method of treatment by therapy involving modulating ATM action.

23. Use of an agent according to claim 21 in the manufacture of a medicament for modulating ATM action.

24. A method of purifying ATM or ATR including contacting a mixture of molecules including ATM or ATR with DNA, washing off molecules which do not bind the DNA, and recovering ATM or ATR from the DNA-bound fraction.

25. Use of DNA for purifying ATM or ATR.

26. A method of purifying ATM or ATR, including contacting a mixture of molecules including ATM or ATR with NTA, washing off molecules which do not bind the NTA, and recovering ATM or ATR from the NTA-bound fraction.

27. A method according to claim 26 wherein the mixture is contacted with NTA in the presence of Ni^{2+}.

28. Substantially pure ATM.

29. Substantially pure ATR.